

# Notice of Allowability

Application No.

10/781,571

Examiner

Nguyen T. Ha

Applicant(s)

DOLJACK ET AL.

Art Unit

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## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/3/2007 & 2/2/2007.
2. ☒ The allowed claim(s) is/are 1,5,6,8-12,20,24,25 and 27-54.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

NGUYEN T. HA  
PRIMARY EXAMINER

## **DETAILED ACTION**

### ***Response to Amendment***

1. The examiner acknowledges the applicant's submission of the amendment dated 2/2/2007. At this point, claims 39-54 have been added. Claims 1, 5-6, 8-12, 20, 24-25 and 27-54 are pending in the instant application.

### ***Response to Arguments***

2. The applicant's argument that Thorne et al. failed to disclose a inductor-free circuitry for controlling voltage imbalances between a pair of capacitors connected in a series arrangement having an active integrated within the inductor-free circuitry between the first, second and third terminals and adapted to substantially balance the voltage imbalances between the pair of capacitors, the active element having power connections to the first and third terminals. The examiner finds this argument persuasive. Therefore, the examiner made decision to allow this limitation over the prior art of record.

### ***Allowable Subject Matter***

3. Claims 1,5-6, 8-12, 20, 24-25 and 27-54 are allowed.

The following is an examiner's statement of reasons for allowance:

With respect to claims 1,5,8-12 and 32-35, the prior art alone or in combination does not teach the limitation of a module having inductor-free circuitry for controlling voltage imbalances between a pair of capacitors connected in a series arrangement comprising an op amp having an input and output, and a feedback loop, the input being connected to two dividing resistors, the output being connected to the second terminal

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through a current limiting resistor, wherein an end of the feedback loop is connected between the output and the current limiting resistor.

With respect to claims 6, the prior art alone or in combination does not teach the limitation of a module having inductor-free circuitry for controlling voltage imbalances between a pair of capacitors connected in a series arrangement comprising an active element integrated within the inductor-free circuitry between the first, second and third terminals and adapted to substantially balance the voltage imbalances between the pair of capacitors, the active element having power connections to the first and third terminals, wherein the active element is a switched voltage converter that incorporates a flying capacitor.

With respect to claims 20, 24, and 27-31, the prior art alone or in combination does not teach the limitation of a method for controlling voltage imbalances between a pair of capacitors connected in a series arrangement comprising the steps of: forming an active element within an inductor-free circuitry between the first, second and third terminals such that the active element substantially balances the voltage imbalances between the pair of capacitors, the active element having power connections to the first and third terminals, wherein the active element is an op amp, the op amp having an input and output, and a feedback loop, the input being connected to two dividing resistors, the output being connected to the second terminal through a current limiting resistor, wherein an end of the feedback loop is connected between the output and the current limiting resistor.

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With respect to claim 25, the prior art alone or in combination does not teach the limitation of a method for controlling voltage imbalances between a pair of capacitors connected in a series arrangement, and integrating an active element within an inductor-free circuitry between the first, second and third terminals such that the active element substantially balances the voltage imbalances between the pair of capacitors, the active element having power connections to the first and third terminals, wherein the active element is a switched voltage converter the incorporates a flying capacitor.

With respect to claims 36, 39-44, and 51-54, the prior art alone or in combination does not teach the limitation of a module having inductor-free circuitry for controlling voltage imbalances between a pair of capacitors connected in a series arrangement, and an active integrated within the inductor-free circuitry between the first, second and third terminals and adapted to substantially balance the voltage imbalances between the pair of capacitors, the active element having power connections to the first and third terminals.

With respect to claims 37, and 45-50, the prior art alone or in combination does not teach the limitation of a method for controlling voltage imbalances between a pair of capacitors connected in a series arrangement, and integrating an active element within an inductor-free circuitry between first, second and third terminals such that the active element substantially balances the voltage imbalances between the pair of capacitors, the active element having power connections to the first and third terminals.

With respect to claim 38, the prior art alone or in combination does not teach the limitation of an active balancing system for controlling voltages, the system comprising

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an active element connected between the first and second capacitors, the active element substantially balancing a voltage imbalance between the first and second capacitors, wherein the active element is inductor free.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### **Citation Relevant of Prior Art**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Ishii et al. (US 7,109,438) disclose power supply apparatus for arc-utilizing apparatus.
- b. Kutkut (US 6,664,762) discloses high voltage battery charge.
- c. Miller et al. (US 6,456,502) disclose integrated circuit device/circuit board connection apparatus.
- d. Seale et al. (US 6,208,497) disclose system and method for servo control of nonlinear electromagnetic actuators.

#### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Ha whose telephone number is 571-272-1974. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NGUYEN T. HA  
PRIMARY EXAMINER

NH

October 1, 2007